

OPTICAL ASSEMBLY HAVING CYLINDRICAL LENSES AND RELATED METHOD OF MODULATING OPTICAL SIGNALS

5

ABSTRACT OF THE DISCLOSURE

Described embodiments provide for an optical communications assembly or other optical assembly in which the post-dispersion optical signals are controlled in dispersive and non-dispersive directions. In one embodiment, the assembly includes an optical signal collimator configured to emit an optical signal based on an input communication signal. In addition, the assembly includes a dispersive device that receives the optical signal and disperses multiple wavelength channels of the optical signal in a dispersive direction. The assembly further includes a first light-directing device configured to control the dispersion of the multiple wavelength channels in the non-dispersive direction. A second light-directing device is provided to control dispersion in the dispersive direction. Specifically, the first and second light-directing devices focus the multiple wavelength channels in the dispersive and non-dispersive directions so as to make the multiple wavelength channels either propagate in parallel or re-converge or diverge at a different rate in both directions. By controlling the multiple channel wavelengths through the use of the light-directing devices, the spot sizes and shapes of the channels projected onto a light modulating device can be controlled. Related methods of such modulating are also disclosed.